



WEST SHORE SCHOOL DISTRICT

# K-5 STEAM Program

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Science Technology Engineering Arts Mathematics

# Building West Shore's K-5 STEAM Program

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## Summer 2016

- Select K-5 District administrators attended a STEAM Forum at State College.

## Fall 2016 - Summer 2018

- Researched best practices and curriculum as it related to STEAM. Resources were selected to support our vision.
- Began to design a K-5 STEAM program.
  - Dedicated STEAM lab in each elementary school - starting with Rossmoyne.
  - Selected Engineering byDesign (EbD) STEAM program.

## January 2020

- Awarded a \$35,000 PAsmart Grant for STEAM education.
- Purchased materials for the 2020-2021 school year.



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## February-March 2021

- Trained Rossmoyne teachers in EbD curriculum.

## Summer 2021

- Will offer EbD summer professional development via Schoology.
- Will revise elementary Science curriculum to include EbD STEAM program.

## Fall 2021

- EbD STEAM curriculum will be utilized at Rossmoyne.
- All other elementary teachers will receive training in EbD curriculum during the 2021-2022 school year. Teachers will incorporate STEAM into the science program as they receive training.



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# Engineering byDesign (EbD) Curriculum



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- With Engineering byDesign (EbD) curriculum, students in grades K-5 will learn standards via classes that encourage collaboration, boost creativity, increase technical literacy, and solve problems.
- The EbD model is based on the Common Core State Standards for Mathematics and English Language Arts, Next Generation Science Standards, and the Standards for Technological Literacy.
- The K-5 Program has been aligned to the National Academy of Engineering's Grand Challenges for Engineering, which will serve to support Engineering's Grand Challenges in grades 6-8.



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# Engineering byDesign (EbD) Curriculum



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Grade	EbD Topic	Activities	Current Units in District Curriculum
Kindergarten	A Home for All Seasons	basic needs of life, natural/human made, habitats, insects, measurement	Weather and Seasons
First Grade	Agriculture Around Us	planting seeds, edible parts of plants, measuring plant growth, tower gardens, garden by inch	Plants
Second Grade	Our Environment, Our Health	reduce, reuse, recycle; fossil fuel pollution; air pollution; manufacturing; plastics	Environmental Interactions
Third Grade	Every Drop Matters	clean water, water cycle, filtration, pollution, water treatment methods	Biomes and Ecosystems
Fourth Grade	The Power of Solar	clean energy, usage and conservation, solar cells, wind turbines	Electricity
Fifth Grade	Our Water, Our World	water cycle, conservation, pollution, water treatment	Water, Wetlands, and Watersheds



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## Dedicated STEAM Labs

- Rossmoyne will be our first elementary school equipped with a dedicated STEAM lab.
- STEAM labs will be added to all elementary schools by the 2023-2024 school year.





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## Materials Purchased with the PAsmart Grant

*Each District Elementary School will receive...*

- × Engineering byDesign (EbD) material kits for grades K-5.
- × Erosion models and a stream table.
- × A 3-D printer and filaments.
- × Teacher and administration training in the EbD curriculum.

*Rossmoyne Elementary School will receive...*

- × Ten iPads for use in the new STEAM lab.



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# Teaching our Future Leaders

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*“STEM education is very important to mankind just like the water we drink and the air we breathe in, we need it to produce more critical thinkers, problem solvers, innovators, and the world best economy drivers.”*

*Bamigboye Olurotimi*